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IS 11343 (1994) : Packaging - Sacks made from thermoplastic films - Vocabulary [PCD 21: Plastics Containers]

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बोरियाँ — शब्दावली

( पहला पुनरीक्षण )

*Indian Standard*

**PACKAGING — SACKS MADE FROM  
THERMOPLASTIC FILMS — VOCABULARY**

( *First Revision* )

UDC 621.798.15 : 678.073 : 001.4

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**BUREAU OF INDIAN STANDARDS**  
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## **NATIONAL FOREWORD**

This Indian Standard which is identical with ISO 6590/2 'Packaging — Sacks — Vocabulary and types — Part 2 : Sacks made from thermoplastic flexible film', issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendation of Plastics Containers Sectional Committee and approved by the Petroleum, Coal and Related Products Division Council.

The text of ISO standard has been approved as suitable for publication as Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following :

- a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.
- b) Comma (,) has been used as a decimal marker while in Indian Standards the current practice is to use point (.) as the decimal marker.

In this adopted standard, reference appears to ISO 6590/1. The Indian Standard IS 9028 : 1976 'Glossary of terms relating to paper sacks', which is technically equivalent to ISO 6590/1 : 1983 'Packaging — Sacks — Vocabulary and types — Part 1 : Paper sacks' is to be substituted in its place.

## **EXPLANATORY NOTE**

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Plastics Containers Sectional Committee had been approved by the Petroleum, Coal and Related Products Division Council.

This Indian Standard was first published in 1985 and was based on International Standard ISO 6590/2 'Packaging — Sacks — Vocabulary and types—Part 2 : Sacks made from thermoplastic flexible films' issued by the International Organization for Standardization (ISO). The present revision has been taken up as a result of review of the standard by the concerned Technical Committee and it has been decided to adopt ISO 6590/2-1986 under dual numbering system.

## Indian Standard

# PACKAGING — SACKS MADE FROM THERMOPLASTIC FILMS — VOCABULARY

(First Revision)

### 1 Scope and field of application

This part of ISO 6590 defines terms commonly used in plastic sack manufacture. It refers to single-and multi-ply sacks made from thermoplastic flexible film; it does not refer to bags for the retail trade.

NOTE — ISO 6590/1 defines terms related to paper sacks.

### 2 General terms

**2.1 thermoplastic flexible film sack:** A container made essentially from one or more flattened tubular plies of thermoplastic flexible film closed at least at one end, possibly in combination with other flexible materials to provide the properties required for filling and the chain of distribution of goods.

#### NOTES

1 Hereafter where the word *sack* or *plastic sack* is used in the text of this part of ISO 6590, *sack of thermoplastic flexible film* is to be understood. If no prefix is applied to a term under definition, *plastic sack* is also to be understood.

2 For some purposes it may be necessary to have limits for the size of a plastic sack. In practice, a tube circumference of not less than 550 mm may be found useful.

**2.2 ply:** A film of thermoplastic or other flexible material, or combination of such materials, forming the walls of a sack.

**2.3 gusset:** A fold inserted in the longitudinal edge of a tube or sack.

**2.4 tube:** One or more plies in the form of a flattened cylinder cut into prescribed lengths.

**2.4.1 flat tube:** A tube comprised solely of flattened cylindrical plies with no inserted folds.

**2.4.2 gusseted tube:** A tube with folds inserted in the longitudinal edges.

**2.5 heat sealing; welding:** Joining together by the application of heat.

**2.5.1 longitudinal heat sealing:** Sealing by which the longitudinal overlap (see 2.7.1) of a ply is joined together by the application of heat.

**2.5.2 transverse heat sealing:** Sealing by which the tube is closed at one or both ends.

**2.6 pasting; adhesive bonding:** Joining together by means of an adhesive.

**2.6.1 longitudinal seam:** Pasting by which the longitudinal overlap (see 2.7.1) of a ply is joined together by means of an adhesive.

NOTE — The seam may be continuous or interrupted.

**2.6.2 transverse pasting:** Application of adhesive between the plies at one or both ends of a tube.

NOTE — Transverse pasting facilitates separation of the front and back sides of the tube during manufacture or end use, and can increase the strength of certain types of sacks.

**2.6.3 bottom pasting:** Pasting by which the tube is closed at one or both ends by means of an adhesive.

NOTE — Before closure of the tube the ends are folded and/or formed into a suitable shape.

**2.7 overlap:** Areas of a tube or ply which are superposed.

**2.7.1 longitudinal overlap:** Areas of the longitudinal edge of a ply which are superposed.

**2.7.2 bottom overlap:** Areas of the transverse edges of a tube which are superposed when formed into a bottom.

**2.8 valve:** An aperture, normally situated in one corner of a sack, through which the sack is filled, and which, after filling, does not readily allow reverse flow of the contents.

### 3 Types of sacks

Table — Classification of types of sacks

	Open mouth	Valved; "closed mouth"
Heat sealed	Flat (see figure 1)	Flat (see figure 6)
	Gusseted (see figure 2)	Flat, side valved (see figure 7)
	Gusseted with corner seals (see figure 3)	Gusseted (see figure 8)
Pasted	Flat hexagonal bottom (see figure 4)	Flat hexagonal ends <sup>1)</sup> (see figure 10)
	Gusseted rectangular bottom (see figure 5)	

1) Various designs of sacks containing a combination of pasted and heat sealed ends are possible but these are not listed in the above table. For an example, see 3.6.6.

**3.1 flat sack:** A sack manufactured from a flat tube.

**3.2 gusseted sack:** A sack manufactured from a gusseted tube.

**3.3 heat sealed sack:** A sack closed at one or both ends by means of a continuous transverse heat sealing.

**3.4 pasted sack:** A sack closed at one or both ends by pasting.

**3.5 open-mouth sack:** Tube closed at one end only during manufacture.

**3.5.1 open-mouth heat sealed flat sack:** Flat tube closed at one end by means of continuous transverse heat sealing (see figure 1).

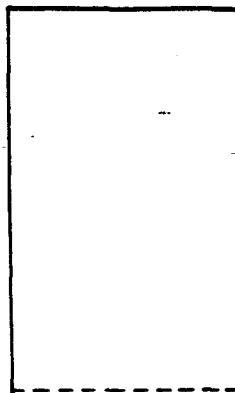


Figure 1 — Open-mouth heat sealed flat sack

**3.5.2 open-mouth heat sealed gusseted sack:** Gusseted tube closed at one end by means of continuous transverse heat sealing (see figure 2).

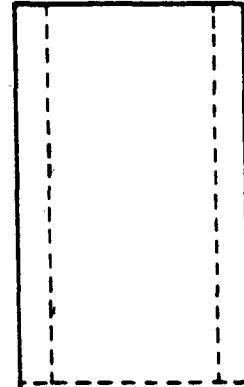


Figure 2 — Open-mouth heat sealed gusseted sack

**3.5.3 open-mouth heat sealed gusseted sack with corner seals :** Gusseted tube closed at one end by means of continuous transverse heat sealing having corner seals in the gusseted area at the bottom and the top (see figure 3).

**3.5.4 open-mouth pasted flat hexagonal bottom sack :** Flat tube closed at one end by folding, forming and pasting the bottom in a hexagonal shape (see figure 4).

**3.5.5 open-mouth pasted gusseted rectangular bottom sack:** Gusseted tube closed at one end by folding, forming and pasting the

bottom in a rectangular shape (commonly known as *self-opening satchel*; see figure 5).

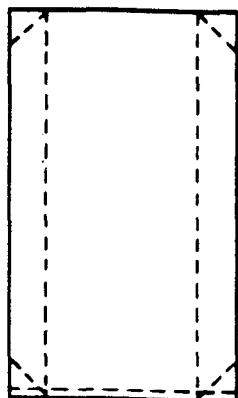


Figure 3 — Open-mouth heat sealed gusseted sack with corner seals

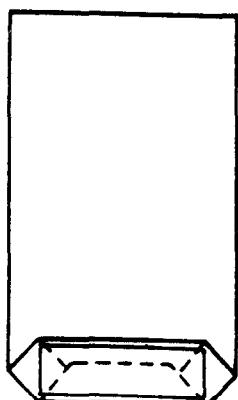


Figure 4 — Open-mouth pasted flat hexagonal bottom sack

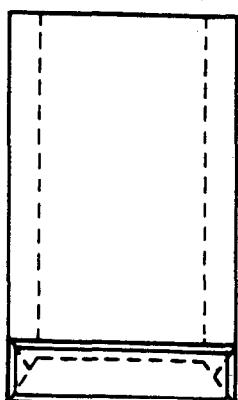


Figure 5 — Open-mouth pasted gusseted rectangular bottom sack

**3.6 valved sack:** Tube closed at both ends but provided with a valve.

**3.6.1 valved heat sealed flat sack:** Flat tube closed at both ends by means of continuous transverse heat sealing (see figure 6).

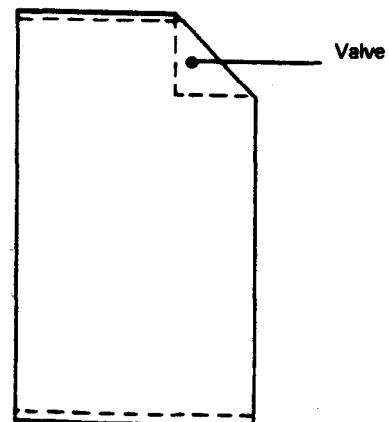


Figure 6 — Valved heat sealed flat sack

**3.6.2 Side valved heat sealed flat sack:** Flat tube closed at both ends by means of continuous transverse heat sealing provided with a side valve (see figure 7).

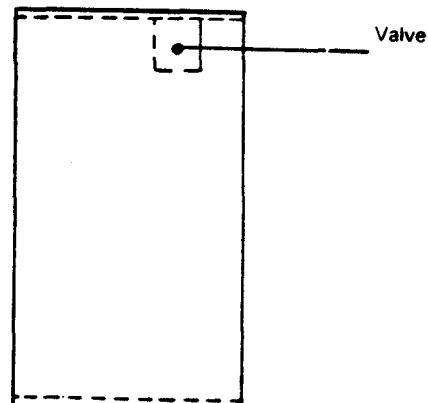


Figure 7 — Side valved heat sealed flat sack

**3.6.3 Valved heat sealed gusseted sack:** Gusseted tube closed at both ends by means of continuous transverse heat sealing (see figure 8).

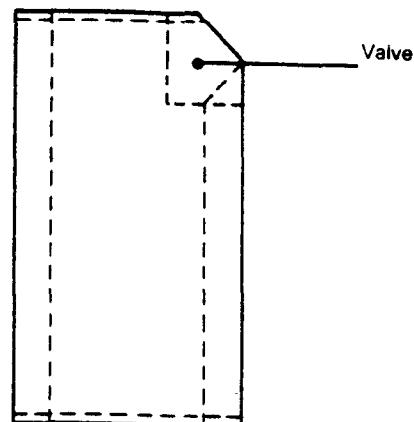
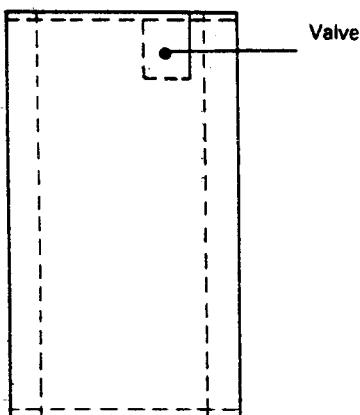


Figure 8 — Valved heat sealed gusseted sack

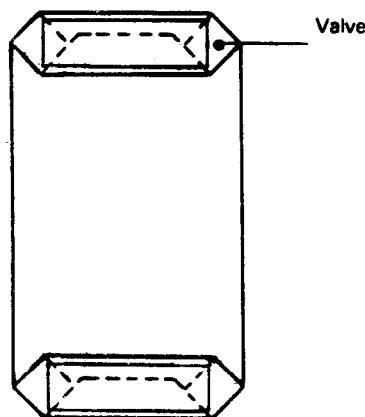
**3.6.4 Side valved heat sealed gusseted sack:** Gusseted tube closed at both ends by

means of continuous transverse heat sealing provided with a side valve (see figure 9).



**Figure 9 — Side valved heat sealed gusseted sack**

**3.6.5 Valved pasted flat hexagonal ends sack:**  
Flat tube closed at both ends by folding, forming and pasting the ends in a hexagonal shape (see figure 10).



**Figure 10 — Valved pasted flat hexagonal ends sack**

### 3.6.6 Combinations of ends

Various combinations of pasted and heat sealed ends can be produced, for example :

**valved pasted heat sealed flat sack with one hexagonal end:** Flat tube closed at one end by means of continuous transverse heat sealing and at the other end, which includes the valve, by folding, forming and pasting in a hexagonal shape (see figure 11).

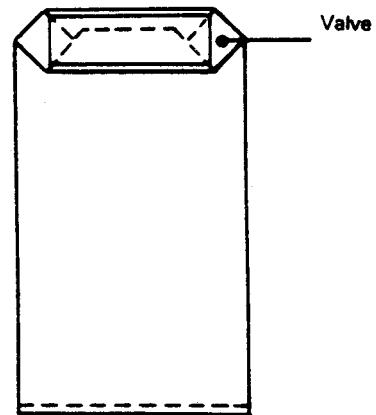
## 4 Constructional details

### 4.1 Pasted closures and accessory materials

**4.1.1 Bottom cap:** Plastic strip bonded to a sack end.

### 4.2 Valve types

**4.2.1 Valve sleeve:** An insert of thermoplastic flexible film incorporated in the valve to improve its performance.



**Figure 11 — Valved pasted heat sealed flat sack with one hexagonal end**

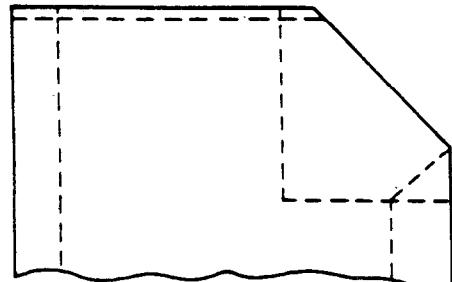
### 4.2.2 Valves in heat sealed sacks

**4.2.2.1 Simple valve:** One corner of a tube is folded in, thus creating a valve after heat sealing [(see figure 12 a)].

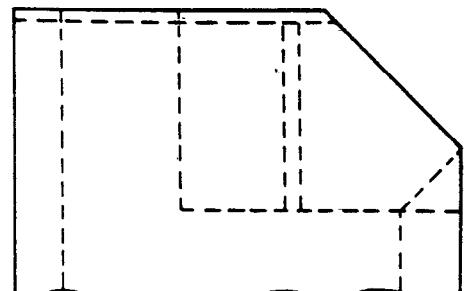
**4.2.2.2 Internal sleeve valve:** Valve with sleeve extending within the sack [see figure 12 b)].

**4.2.2.3 External sleeve valve:** Valve with protruding sleeve [see figure 12 c)].

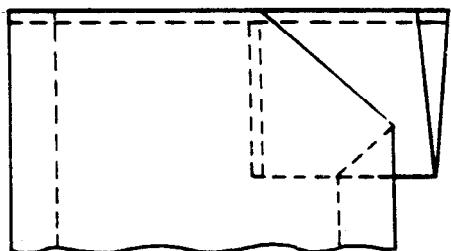
**4.2.2.4 Side valve:** Valve created by leaving the longitudinal seal open in the side [see figure 12 d)].



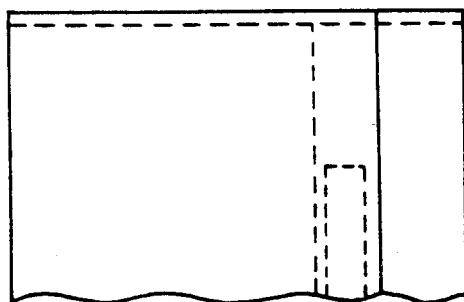
**a) — Simple valve (see 4.2.2.1)**



**b) — Internal sleeve valve (see 4.2.2.2)**



c) — External sleeve valve (see 4.2.2.3)



d) — Side valve (see 4.2.2.4)

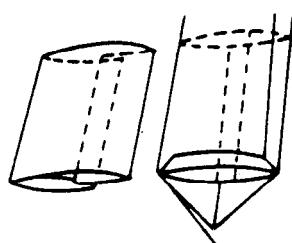
Figure 12 — Valves in heat sealed sacks

#### 4.2.3 Valves In pasted sacks

**NOTE**— In certain cases, the valve sleeve width may be less than the bottom width.

**4.2.3.1 Internal sleeve valve:** Valve with sleeve extending within the sack [see figure 13 a)].

**4.2.3.2 external sleeve valve:** Valve with protruding sleeve, normally provided with a pocket [see figure 13 b)].

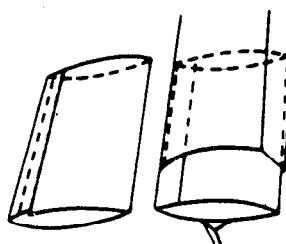


a) — Internal sleeve valve (see 4.2.3.1)

#### 4.3 Other constructional details

**4.3.1 thumb cut:** A cut through all plies at one side of the top end of open mouth sacks, or in external valve sleeves, to facilitate opening prior to filling.

**4.3.2 closing device:** A special device with which the sack is provided for closing when filled.



b) — External sleeve valve (see 4.2.3.2)

Figure 13 — Valves in pasted sacks

**4.3.3 opening device:** A special device with which the sack is provided to facilitate opening of the filled and closed sack.

**4.3.4 carrying device:** A special device with which the sack is provided to facilitate transport.

**4.3.5 viewing device; window:** Transparent area provided in the face of a sack to facilitate sight of the contents.

**4.3.6 perforation:** Holes pierced through the sack walls or individual plies thereof to facilitate air release when filled.

**4.3.7 anti-slip treatment:** A substance in the film or applied to the outer surface of a sack to increase the coefficient of friction.

## 5 Materials

**5.1 plastic film :** Plastic materials in the form of flat or tubular films.

#### 5.2 Accessory materials

**5.2.1 adhesive:** The bonding material(s) used in sack manufacture, for example polyurethane for cold application and polyethylene-based hot melt for hot application.

## 6 Description of the parts of a sack

The following indications help to identify the various parts of a sack :

Filling end : the open or valved end.

Closed end: the sealed or non-valved end.

Face side : the side containing the frontside print.

Back side : the side opposite the frontside print.

The left and right sides of a sack are defined when the frontside print is upright, when viewed from above.

**NOTE**— It is recognized that this instruction does not cover every situation.

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### **Amendments Issued Since Publication**

Amend No.	Date of Issue	Text Affected

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